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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,080	08/19/2003	Rolf Bunger	CIP of SN 09/828,589	3058

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EXAMINER	
HANDY, NIKKI R	
ART UNIT	**PAPER NUMBER**
1616	

DATE MAILED: 09/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/643,080	BUNGER ET AL.	
	Examiner	Art Unit	
	Nikki Handy	1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-19 are rejected under 35 U.S.C. 112, first paragraph as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

For rejections under 35 U.S.C. 112, first paragraph, the following factors must be considered (In re Wands, 8 USPQ2d 1400, 1404 (CAFC, 1988)):

1) Nature of invention.

2) State of prior art.

3) Existence of working examples.

4) Breadth of claims.

5) Level of ordinary skill in the art.

1) Nature of the invention.

The nature of the invention is a method for enhancing the phosphorylation potential within the cells of a mammal in order to prevent and/or ameliorate the deterioration or promote the restoration and preservation of normal cell functions comprising administering to a mammal in need thereof a pharmaceutical composition

containing as an active ingredient a salt of an alpha-ketocarboxylic acid having the formula R-C(0)(CO)OM.

2) State of the prior art.

The state of the prior art (USPN '751 and USPN '515) teaches a method of just treating the phosphorylation potential within the cells of a mammal for the deterioration or promotion to restore and preserve normal cell functions using an active ingredient, a salt of an alpha-ketocarboxylic acid.

3) Existence of working examples

Working examples can be found on page 11 where applicant teaches a method for treating rats (mammal) to preserve cells. Pyruvate, an alpha-ketocarboxylic salt, is used where no other working alpha-ketocarboxylic salts are used other than utilizing pyruvate for treatment in the instant invention. The method deals with treatment of the cells as opposed to prevention of the cells.

4) Breadth of claims.

Claims are broad due to the vast number of alpha-ketocarboxylic compounds encompassed by the instant invention.

5) Amount of direction and guidance provided by the inventor.

The amount of direction or guidance present is found on page 11 wherein *in vivo* studies are done with rats (mammals) where treatment is the administration of the composition comprising the cationic form of pyruvate in combination with creatine and nicatinamide to the rats for the preservation of cells although the invention makes claims to alpha-ketocarboxylic salt. The alpha-ketocarboxylic salt broadly only

discusses pyruvate which is exemplified as the alpha-ketocarboxylic salt in the working examples. The examples refer only to treatment and not prevention of the cells for preservation.

Lastly, with respect to the prevention of deterioration or promotion to restore and preserve normal cell functions (a pharmaceutical composition containing the active ingredient a cationic salt of an alpha-ketocarboxylic acid), the specification lacks the critical steps necessary in presenting some type of predictable response in a population of hosts deemed necessary to prevent the condition. Reasonable guidance with respect to preventing the conditions rely on quantitative analysis from defined populations which have been successfully pre-screened and are predisposed to particular types of conditions. The essential element towards the validation of a preventive therapeutic is the ability to test the compounds on subjects monitored in advance of clinical conditions and link those results with subsequent histological confirmation of the presence or absence of the condition. This irrefutable link between the compound (a cationic salt of an alpha-ketocarboxylic acid) and subsequent knowledge of the prevention of the condition is the essence of a valid preventative agent. Further, a preventive administration also must assume that the therapeutic will be safe and tolerable for anyone susceptible to the condition. All of this underscores the criticality of providing workable examples which are not disclosed in the specification, particularly in an unpredictable art such as restoration and preservation of normal cell functions.

In view of the teachings above, and the lack of guidance and or exemplification in the specification, it would not be predictable that the invention of preventing conditions would function as contemplated. Thus, it would require undue experimentation by one of skill in the art.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-5, 8, 10 and 14 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 of U.S. Patent No. 5,536,751. Although the conflicting claims are not identical, they are not patentably distinct from each other because both application and USPN '751 claim a method for enhancing phosphorylation potential within the cells of a mammal in order to prevent and/or ameliorate the deterioration or promote the restoration and preservation of normal cells functions comprising administering to a mammal a pharmaceutical composition comprising as an active ingredient a cationic salt of an alpha-ketocarboxylic acid having the formula R-C(0)(CO)OM. M being the cation. The scope of the application claims differs from the USPN '751 claims in that in the USPN '751 makes claim to the cationic form of the active. Whereas, the instant application claims the cationic form of the active as well as it being in combination with creatine and

nicatinamide. Because the USPN '751 makes claim to the cationic form alone, the USPN '751 inherently claims the invention of the instant application where the cationic form is employed without creatine or nicotinamide.

Claims 1-19 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 5,714,515.

Although the conflicting claims are not identical, they are not patentably distinct from each other because both application and USPN '515 claim a method for enhancing phosphorlyation potential within the cells of a mammal in order to prevent and/or ameliorate the deterioration or promote the restoration and preservation of normal cells functions comprising administering to a mammal a pharmaceutical composition comprising as an active ingredient a cationic salt of an alpha-ketocarboxylic acid having the formula R-C(0)(CO)OM. M being the cation. The scope of the application claims differs from the USPN '515 claims in that in the USPN '515 makes claim to the cationic form of the active. Whereas the instant application claims the cationic form of the active as well as it being in combination with creatine and nicatinamide. Because the USPN '515 makes claim to the cationic form alone, the USPN '515 inherently claims the invention of the instant application where the cationic form is employed without creatine or nicotinamide. In addition although the conflicting claims are not identical, they are not patentably distinct from each other because both application and USPN '515 claim a food product (beverage, confectionary food, candies or pastries) the cationic active ingredient. The food product is also for enhancing the phosphorylation potential within the cells of a mammal therefore one application would be obvious over the other.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-5, 8, 10 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Bunger (Patent No. 5,536,751).

Bunger teaches a method for enhancing phosphorylation potential within the cells of a mammal in order to prevent and/or ameliorate the deterioration or promote the restoration and preservation of normal cells functions comprising administering to a mammal a pharmaceutical composition comprising as an active ingredient a cationic salt of an alpha-ketocarboxylic acid having the formula R-C(0)(CO)OM. M being the cation. The scope of the application claims differs from the USPN '751 claims in that in the USPN '751 makes claim to the cationic form of the active. Whereas the instant application claims the cationic form of the active as well as it being in combination with

creatine and nicatinamide. Because the USPN '751 makes claim to the cationic form alone, the USPN '751 inherently claims the invention of the instant application where the cationic form is employed without creatine or nicotinamide.

Bunger teaches a pharmaceutical composition which contains as an active phosphorylation potential enhancing substance an alpha-ketocarboxylic acid compound or a pharmaceutically-acceptable salt thereof in an amount sufficient to prevent the deterioration or promote the restoration and preservation of normal cell functions. (See Column 7, lines 25-32). Bunger further teaches that the alpha-ketocarboxylic acid can have the formula R-C(0)(CO)OM where M is defined as a cation alone. The cation can be defined as an alkali or alkaline earth metal. The alkali metal can be further defined as sodium. (See Column 24, lines 34-38). According to Bunger, R is an alkyl group containing 1-12 carbons and the alkyl group is methyl. (See Column 8, line 2-6). The pharmaceutical composition mentioned above can be defined as cells of a mammal. (See Column 24, lines 17). Bunger discloses each and every aspect of the invention as claimed by applicant in the instant claims.

Claims 1-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Bunger (Patent No. 5,536,751).

Bunger teaches a method for enhancing phosphorylation potential within the cells of a mammal in order to prevent and/or ameliorate the deterioration or promote the restoration and preservation of normal cells functions comprising administering to a mammal a pharmaceutical composition comprising as an active ingredient a cationic salt of an alpha-ketocarboxylic acid having the formula R-C(0)(CO)OM. M being the

active cation. The scope of the application claims differs from the USPN '515 claims in that in the USPN '515 makes claim to only the cationic form of the active. Whereas the instant application claims the cationic form of the active as well as it being in combination with creatine and nicatinamide. Because the USPN '515 makes claim to the cationic form alone, the USPN '515 inherently claims the invention of the instant application where the cationic form is employed without creatine or nicotinamide. In addition although the conflicting claims are not identical, they are not patentably distinct from each other because both application and USPN '515 claim a food product (beverage, confectionary food, candies or pastries).

Bunger teaches a pharmaceutical composition which contains as an active phosphorylation potential enhancing substance an alpha-ketocarboxylic acid compound or a pharmaceutically-acceptable salt thereof in an amount sufficient to prevent the deterioration or promote the restoration and preservation of normal cell functions. (See Column 7, lines 31-37). Bunger further teaches that the alpha-ketocarboxylic acid has the formula R-C(0)(CO)OM, where M is the active cation. (See Column 22, line 55-56). According to Bunger, R is an alkyl group containing 1-12 carbons (See Column 7, line 58 and the alkyl group is methyl. (See Column 8, line 10). The pharmaceutical composition mentioned above can be defined as cells of a mammal. (See Column 22, line 38). The food product is also for enhancing the phosphorylation potential within the cells of a mammal. The mammalian organs comprise a group of the heart, liver, kidney, brain, spleen, vessels, arteries, endothelium, pancreas and glands. (See Column 8, lines 42-44). Bunger teaches a food product that is a beverage, confectionery food,

candies or pastries. (See Column 8, lines 54-61). The food product uses a pharmaceutical composition as an active phosphorylation potential enhancing substance an alpha-ketocarboxylic acid. (See Column 7, lines 52-54 and Column 8, lines 51-53). Bunger discloses each and every aspect of the invention as claimed by applicant in the instant claims.

Numbering of Claims

The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Claim 5 is followed by Claim 7 therefore Claim 6 is missing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikki Handy whose telephone number is (571) 272-9923. The examiner can normally be reached on Monday-Friday 8:30 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on (571) 272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nikki Handy
Patent Examiner
Art Unit 1616

SHELLEY A. DODSON
PRIMARY EXAMINER